

Distributed Energy Resources at the Seattle Regional Office

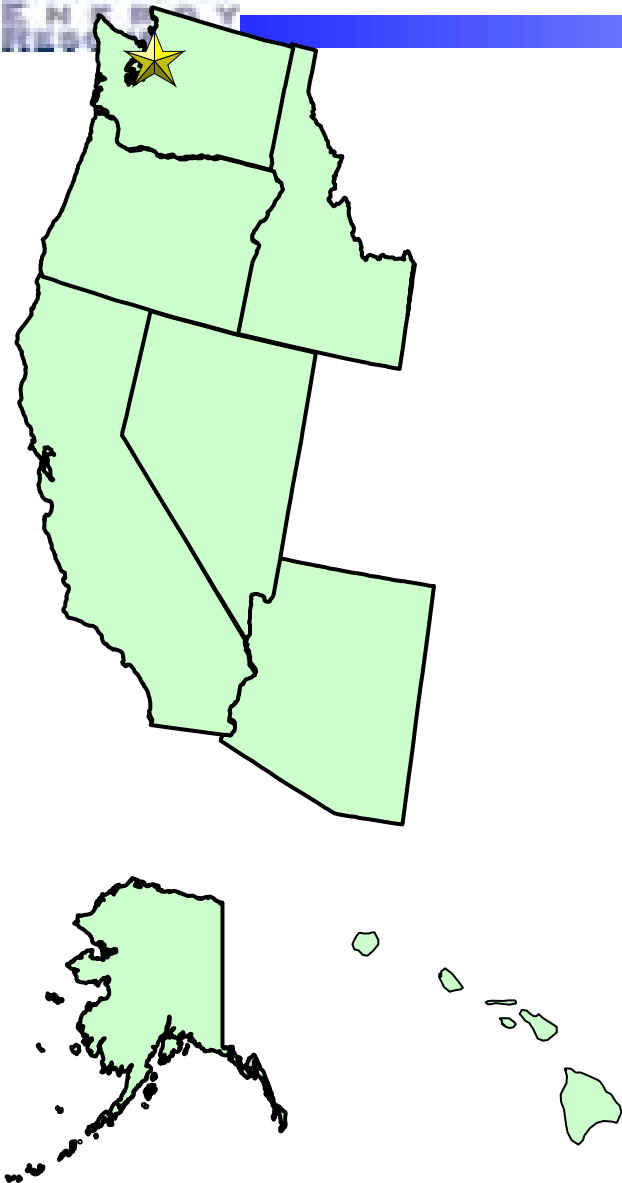
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U.S. Department of Energy

November 30, 2001

Washington, D.C.

Seattle Regional Office



- 43 million people in 7 time zones (70% in California)
- From AK to Mexican border and through the Pacific Islands
- Huge array of Climates and Energy usage Pattern
- Strong interest in EERE and the Environment
- Highest (Hawaii) and lowest (Idaho) average retail electricity prices among U.S. states

SRO DER Overview



- Drivers for Change
 - National Energy Policy
 - Capacity Constraints
 - Deregulation
 - Retail Price variation
- SRO DER Program
 - Projects
 - Outreach/Education
- State Profile: California
 - Issues
 - Federal efforts
 - State efforts
- Opportunities
 - Federal Land Ownership
 - 500kV DC Intertie
 - Program Development

Drivers for Change



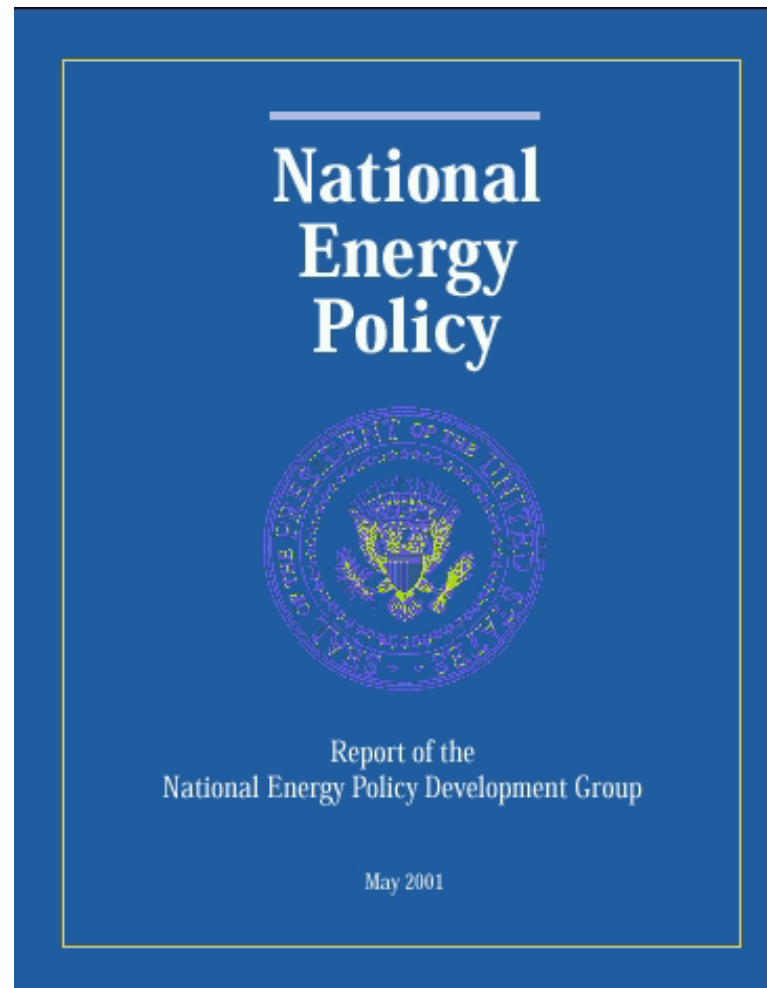
- The President's National Energy Policy
 - over 100 recommendations to modernize, diversify, and strengthen national energy infrastructure
- Regional Capacity Constraints
 - entire West under 10% capacity margin
- Deregulation
 - Legislative support for distributed generation
 - Regional support for renewables
- Average Retail Price variations

The President's National Energy Policy



Contains over 100 recommendations

- ▶ **42 modernize and increase conservation, protect the environment and help communities.**
- ▶ **35 diversify the supply of clean, affordable renewable energy and modernize our antiquated infrastructure.**
- ▶ **25 strengthen global alliances and national energy security.**



Capacity Constraints



“If the energy infrastructure of this country is inadequate or in some way excessively costly, it will undermine economic growth, and is therefore a major issue that must be addressed.”

Alan Greenspan, January 26, 2001



2009 Projections

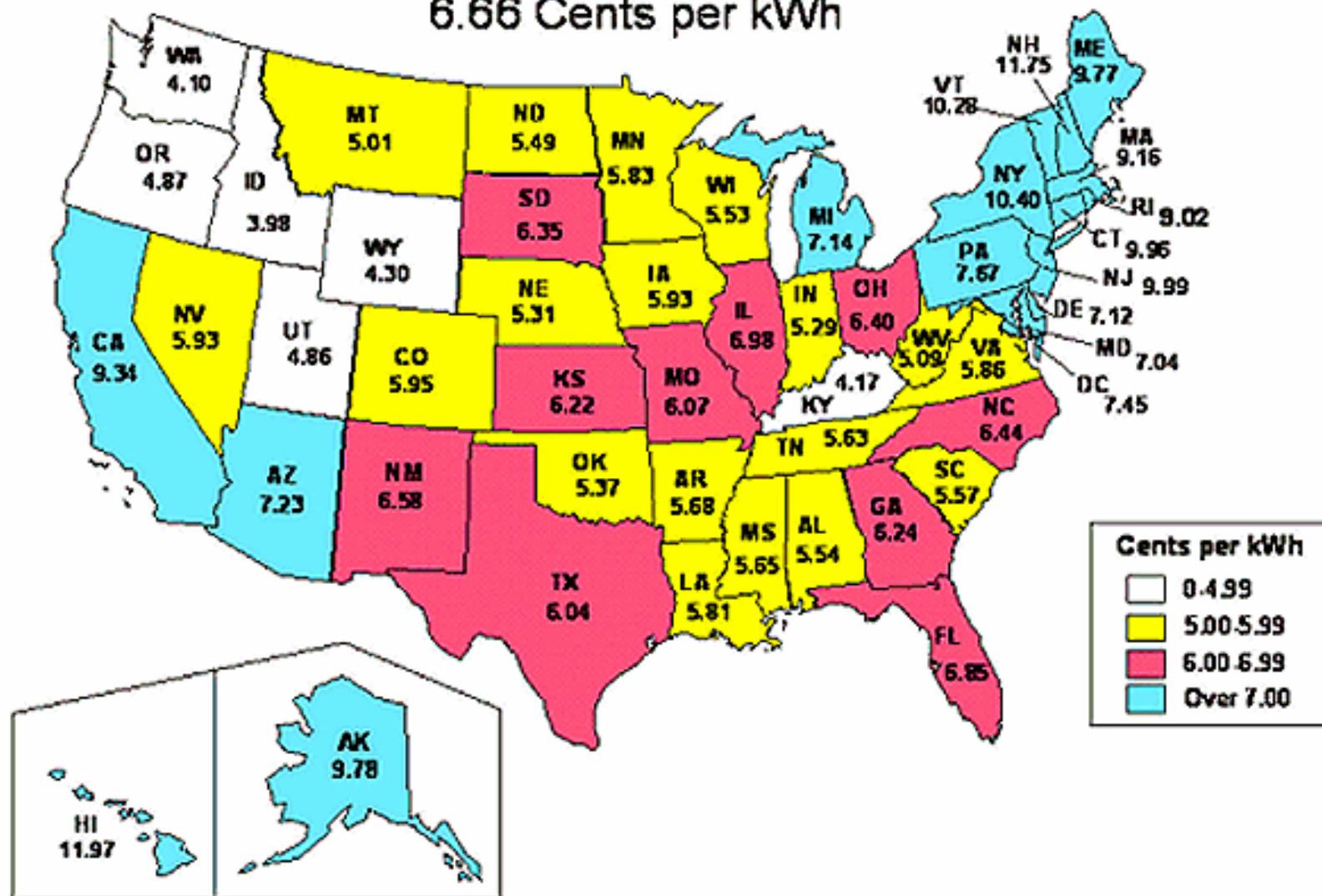
 **Areas with Capacity Margins < 10 percent**



Source: National Electricity Reliability Co

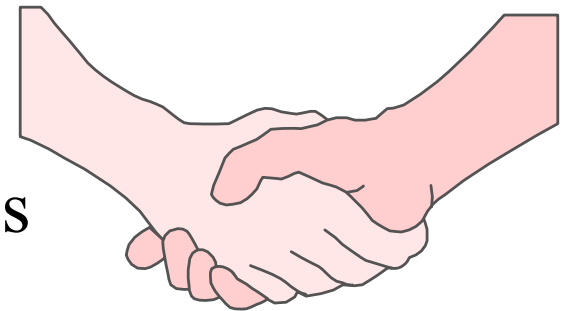
Average Retail Price Varies

1999 National Average Retail Price was
6.66 Cents per kWh



SRO DER Activities

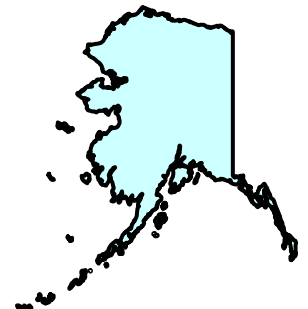
- Project development
 - Hawaii Interconnection workshop
 - Alaska rural village hybrid systems
 - Seattle energy district
- Outreach and Education
 - Expos, Conferences, Workshops
 - State and Community Partnerships
 - DER Capability Building



Projects: Rural Alaska



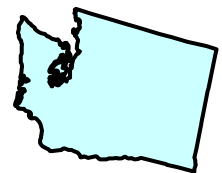
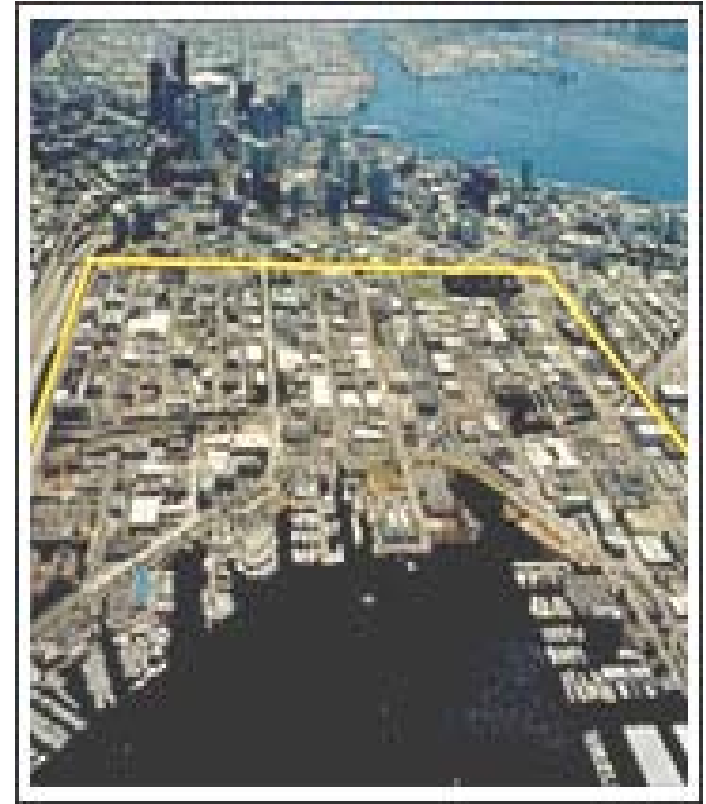
- Alaska Rural Village Electrification and CHP
 - Rural Alaska left out of restructuring plans
 - Decreases cost, dependence on fuel importation
 - Increases energy reliability, efficiency, security
 - Federal, State, community involvement



Projects: Seattle, WA



- S. Lake Union Energy District
 - Proposed Energy District
 - 1 sq. mile Biotech Community
 - Clean, Reliable power essential to avoid revenue loss
 - Customer interest in energy efficiency and renewable generation
 - Utility's Green Power incentives
 - Provide Technical Assistance
 - HeatMAP software monitoring tool



State Profile: California



- Blackouts and brownouts received national media attention
- Created an energy crisis in entire Western Region
- 70% of region's population
- 2nd in nation in electricity consumption
- Federal, State, community efforts



State Profile: California



- FEMP's ALERT program
 - Assessment of Load and Energy Reduction Techniques
 - ALERT '01 limited to California
 - ALERT '02 nationwide
 - Consisted of top 25 Federal energy users in CA
 - Distributed generation and CHP applications considered for sites
 - opportunities for partnership development



State Profile: California



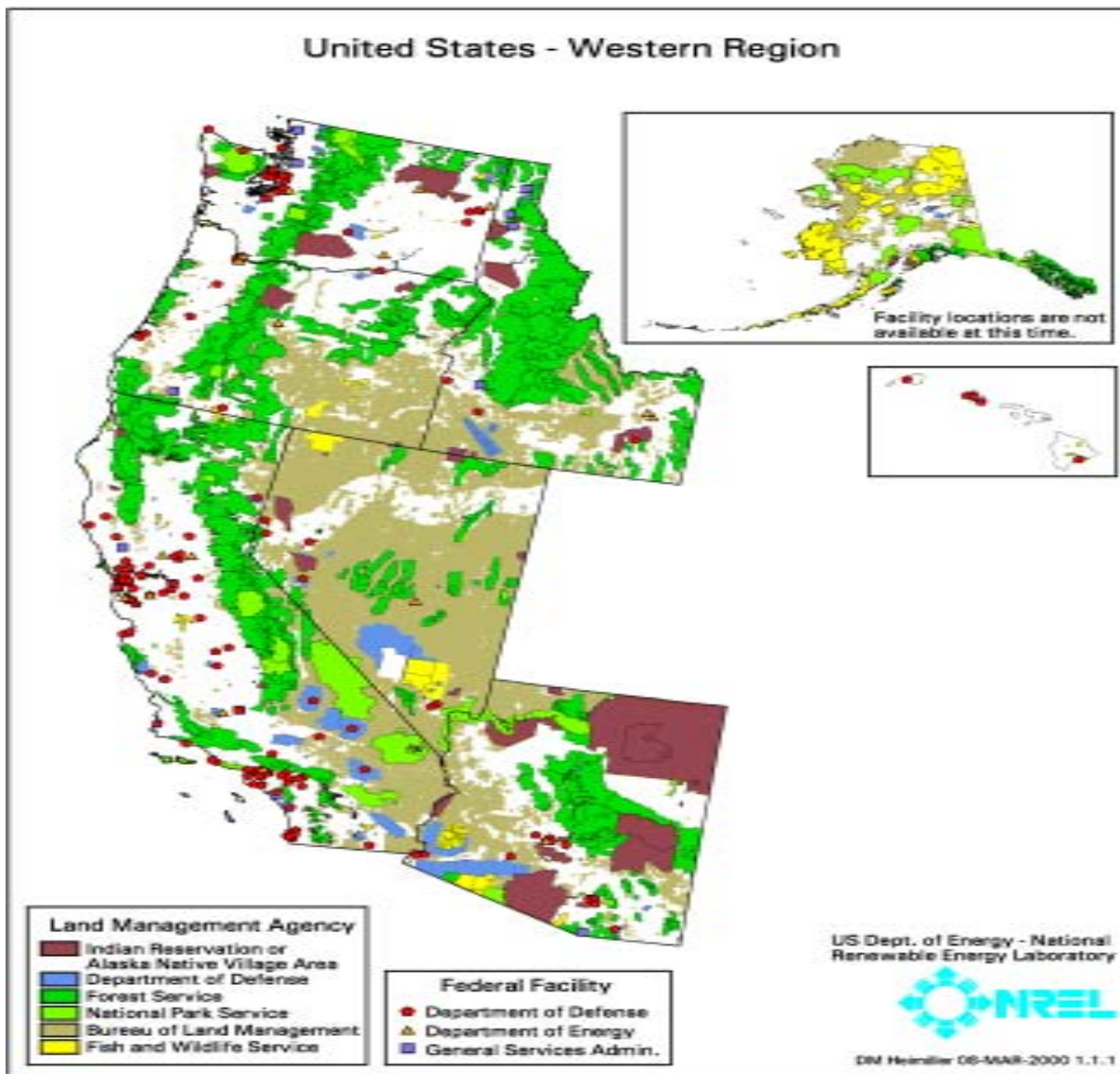
- State initiatives and actions to support DER
 - California Energy Commission
 - Aggressive rebates and buy-down programs
 - Streamlined permitting process
 - State Peak Load Reduction Program
 - Conservation efforts, appliance standards
- More work is still needed...
 - Reinstate deregulation
 - Regional Transmission Organizations
 - State - Utility Cooperatives, partnerships

DER Opportunities



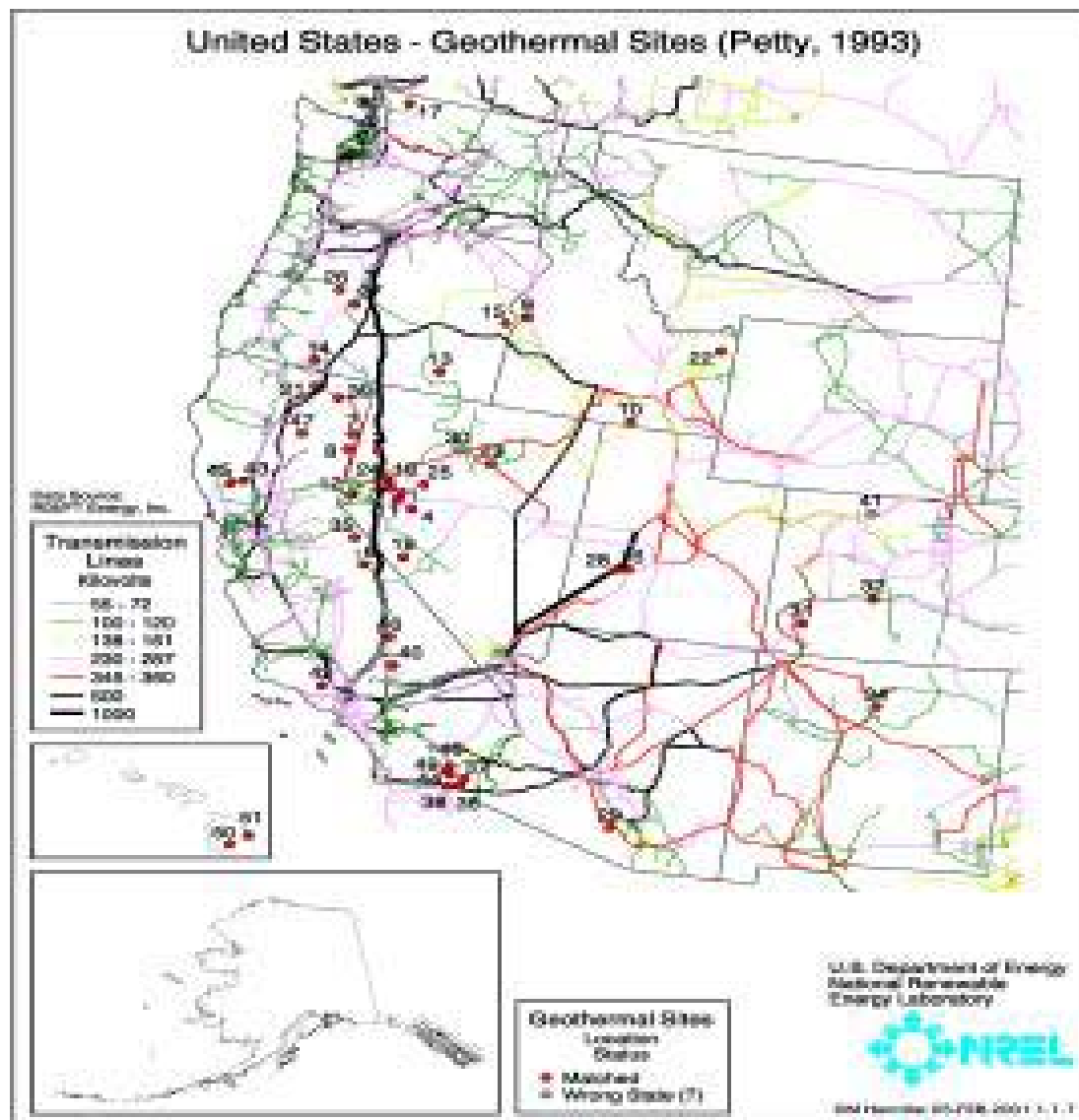
- Federal Land Ownership
 - FEMP DER opportunities
 - 2 new DER technical assistance projects in SRO
- 500kV DC Intertie
- Program Development
 - increase partnerships
 - increase program funding
 - increase projects

Regional Land Ownership





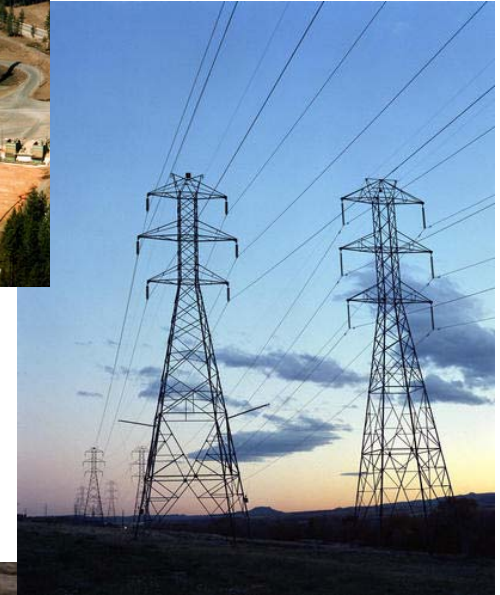
West Coast 500kV DC Intertie





A Vision for the Future

- Revised Legislation supporting DER
- Resource Assessment Maps
- Cost Competitive Technology
- Software Industry
- Transportation Industry
- Energy Transmission



SRO DER Contacts



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 - <http://www.eren.doe.gov/sro/>